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ABSTRACT

Relationships were examined between scores on the Sixteen Personality Factor Questionnaire, Personal Beliefs Inventory, Teaching Practices Inventory, Rokeach Dogmatism Scale, National Teacher Examinations (NTE), and grade point average (GPA) for 55 teacher education students. Significant correlations were established between the cognitive outcomes (NTE and GPA) and personality factors C (emotional vs. mature), L (trusting vs. suspicious), O (placid vs. apprehensive), and Q4 (relaxed vs. tense). High negative correlations were found for the cognitive outcomes and the dogmatism scale, and high positive correlations for the Teaching Practices Inventory (agreement with Dewey's educational philosophy) and the cognitive outcomes. (Author/GDC)

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Personality and Belief System Correlates of Cognitive Outcomes for Teacher Education Students: John Dewey and the NTE

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INTRODUCTION

Numerous research studies have examined relationships between a variety of teacher characteristics and measures of teacher effectiveness, and many of these have used scores from the National Teacher Examination (NTE). Most studies utilizing the NTE have focused primarily on concurrent and predictive validity of NTE scores using cognitive variables such as grade point average (GPA), and skill variables such as supervisor ratings (Quirk, 1973). In a recent review of research studies using GPA and NTE scores by Quirk (1973), 16 positive correlations were reported between Weighted Common Examination (WCET) scores and undergraduate GPA, ranging from .23 to .74 with a median value of .55.

Correlations between NTE scores and ratings of preservice and first year teachers by college supervisors have generally been found to be somewhat lower and more variable than NTE scores and GPA. Flanagan (1941) established a correlation of .41 and Lins (1946) established a correlation of -.15 between ratings of teaching effectiveness by supervisors and NTE scores. Medley and Hill (1970), using Flanders Interaction Analysis and OSCAR IV scores, established a correlation of .66 between lecturing behavior and scores on the NTE science subtest.

Few investigations can be found relating personality and affective characteristics of preservice teachers to their knowledge of teaching and academic performance. Delaney (1954) established a correlation of .43 between interview ratings of dimensions of personality and composite ratings of teacher performance. Tyler (1954) failed to predict high and low teaching performance of male secondary student teachers from scores on scales derived from three personality measures. Studies by Vacchiano, Strauss, and Schiffman (1968) demonstrated relationships between dogmatism and personality characteristics of inservice teachers; and personality differences between "good" and "bad"

teachers were delineated by Lamke (1951). A more recent study by Elmore and Ellett (1978) established relationships between selected personality factors and teaching practices beliefs with students entering the teacher education sequence. In addition, some studies have been undertaken to examine relationships between attitudes toward teaching and dogmatism with samples of inservice teachers (Gage, Leavitt, & Stone, 1957). Little, however, is known about these relationships for samples of preservice teachers at the time they exit the teacher education sequence. Once such relationships are consistently identified for preservice teachers, longitudinal investigations might be undertaken to assess the impact of the professional setting on subsequent affective changes.

Purpose

Research on the characteristics of preservice teachers is important to provide program planners with information useful for student selection, counseling, and general program evaluation. Evidence that successful teacher education students possess particular personality traits, values, and belief systems might well be useful in the future selection of prospective teacher education majors.

The purpose of this investigation was to examine relationships among selected personality and affective characteristics and cognitive outcomes for a sample of teacher education students exiting the University of Georgia teacher education program. Based upon past research demonstrating relationships between personality, dogmatism, teaching practices beliefs, and cognitive outcomes (NTE scores and GPA), the following predictive hypotheses were stated: 1) Selected personality characteristics will be demonstrated to relate significantly to student levels of dogmatism, 2) Personal beliefs and teaching practices beliefs consistent with the educational philosophy of John Dewey will be negatively related to student dogmatism levels, and positively related

to selected personality traits, 3) Teaching practices beliefs and personal beliefs will be relatively independent, and 4) GPA at graduation will correlate positively with Common and Total NTE scores. Since few studies can be found relating affective measures to cognitive outcomes (NTE scores and GPA), no predictive hypotheses concerning these relationships were stated.

METHODS AND PROCEDURES

Sample

Subjects for the study were 63 students exiting the elementary teacher education program at the University of Georgia during the 1975 - 1977 academic years who had completed student teaching as a last requirement for their undergraduate degree. The 63 students represented approximately 16% of all program graduates during the two academic years, and were approximately 95% female.

Instrumentation

Preservice teachers who had completed student teaching during the 1975 - 1977 period were administered the following instrument battery on a voluntary basis during a final seminar before graduation:

16 Personality Factor Questionnaire: Cattell's Sixteen Personality Factor Questionnaire (16PF) is a self-report personality inventory. Beginning with an initial list of 18,000 adjectives connoting personality traits and characteristics, Cattell edited the list to 171 traits which were included in ther personality inventory. Factor analyses of responses to the instrument have indicated support for 12 primary, and 4 questionnaire specific factors. Cattell (1964) has characterized the 16 identified factors as follows: "They leave out no important aspect of the total personality; they are relatively independent of each other; and they are all known to be important in the sense of having a wide influence on behavior." Cattell (1964) has reported reliability and validity evidence for the 16 factors measured by the instrument primarily

in terms of factor loadings. However, factor/scale independence has been questioned by some research studies.

Brown's Experimental Scales: Brown's (1968) Experimental Scales include a Personal Beliefs Inventory (PBI) and a Teacher Practices Inventory (TPI). The PBI consists of 40 general philosophical statements taken from the writings of John Dewey. Twenty of these statements express ideas compatible with Dewey's philosophy, the other twenty are reversed. The compatibility of each statement was determined by a panel of 6 expertly qualified judges. A statement illustrating compatibility with Dewey's philosophy is as follows: "Nothing is or can be unchanging, absolutely certain." In contrast, the statement, "Reaching a condition in which there were no problems would be an ideal life," is considered to be incompatible with Dewey's philosophy.

Respondents to the PBI are asked to indicate on a six-point scale the extent of agreement each statement has with their own personal beliefs. The total instrument score is a summation of all ratings and the higher the score, the greater the agreement with Dewey's philosophy.

The TPI consists of 40 statements about teaching practices suggested by the various categories which constitute a theoretical framework for describing John Dewey's educational philosophy. The following items demonstrate how the TPI focuses on educational practices rather than personal beliefs and exemplify statements compatible and incompatible with Dewey's educational philosophy. The "teacher allows students to move freely about the room while engaged in purposeful activity, " is a statement which agrees with Dewey's educational philosophy. The "teacher usually has all students working on the same page at the same time," is a TPI item expressing disagreement with Dewey's philosophy of education. As with the PBI, a six-point scale is used to indicate levels of agreement, and high total scores show greater agreement with Dewey.

The Rokeach Dogmatism Scale: Rokeach (1960) developed the Dogmatism

Scale as a measure of the degree of flexibility characterizing a respondent's belief system. Studies using the D Scale indicate that it measures authoritarianism--the rigidity of a respondent's beliefs concerning people and ideas--independent of a particular ideology. The D Scale contains 40 statements and is designed to be individually or group administered. Respondents indicate their agreement or disagreement with each item using a six-point scale. Higher total scores indicate higher levels of dogmatism and closemindedness, and greater rigidity in beliefs. Lower scores indicate less dogmatism, more open-mindedness, and greater flexibility in one's belief system.

Criterion Variables

The National Teacher Examination: Since its inception in 1940 by the American Council on Education, the National Teacher Examination (NTE) has been traditionally administered to graduating students of teacher education programs throughout the United States. The examination produces Common, Area, and a variety of subscale scores, as well as a Total score (Common + Area). For this study, the Weighted Common Examination (WCET) and the NTE Total (NTET) were utilized.

Grade Point Average: Cumulative Grade Point Averages (GPA) derived from all undergraduate course work were available for all subjects in the study at the time of graduation. GPA was computed based on the traditionally used 0.0 to 4.0 scale.

Statistical Analyses

Pearson product moment correlation coefficients were computed between subscales of the 16 PF, the D Scale, the PBI, the TPI, and the cognitive outcomes of GPA, WCET, and NTET to examine relationships within and between affective and cognitive variables. For purposes of the study, NTE scores and GPA were conceptualized as criterion variables, and the affective and personality measures as independent variables.

RESULTS

The procedure of computing correlations between and within affective and cognitive variables for the sample investigated yielded some interesting results. Table 1 presents a summary of Pearson Product-Moment correlation coefficients between subscales of the 16 PF, the D Scale, the PBI, and the TPI and the Cognitive outcomes of WCET, NTET, and GPA. As can be seen in the table, WCET and NTET scores were both moderately and significantly correlated ($r=-.23$, $r=-.21$; $p<.05$) with only 16 PF factor L (Trusting vs. Suspicious). For the GPA criterion and the 16 PF, only factor N (Forthright vs. Shrewd) was significantly correlated ($r=.30$). The D Scale scores were significantly, though negatively, correlated with all three cognitive outcomes: WCET, $r=-.22$; NTET, $r=-.30$; and GPA, $r=-.37$; $p<.05$. The PBI scores failed to significantly correlate with any of the criterion variables. The TPI, however, was significantly ($p<.001$) correlated with all three cognitive outcomes: WCET, $r=.45$; NTET, $r=.45$; and GPA, $r=.64$. The highest correlation between the various affective characteristics and outcomes examined was between students' agreement with teaching practices beliefs consistent with the philosophy of John Dewey and cumulative GPA ($r=.64$, $p<.001$)

Within affective and cognitive variables, several significant relationships were established. WCET and NTET scores correlated .67 with GPA, consistent with the upper limit established in previous studies (Quirk, 1973). Scores on the D Scale were significantly and negatively correlated with the PBI ($r=-.35$, $p<.01$). In addition, the Brown PBI and TPI instruments were positively, though moderately, related ($r=.36$, $p<.01$)

A result of particular interest was the frequency of significant correlations between D Scale scores and factors of the 16 PF. These correlations are summarized in Table 2. As can be seen in the table, every factor of the 16 PF significantly and positively correlated with the D Scale be-

TABLE 1

Summary of Pearson Product-Moment Correlation Coefficients
Between Affective and Cognitive Outcome Variables
(n=63)

		Cognitive Outcomes		
	16 PF Factors	WCET	NTET	GPAG[1]
A	Reserved vs. Out-going	-.04	-.05	.13
B	Dull vs. Bright	.10	.13	.25
C	Emotional vs. Mature	-.00	.03	.27
E	Submissive vs. Dominant	-.18	-.14	.06
F	Sober vs. Enthusiastic	-.15	-.12	.13
G	Expedient vs. Conscientious	-.08	-.06	.24
H	Shy vs. Venturesome	-.12	-.09	.17
I	Toughminded vs. Tenderminded	.01	.04	.21
L	Trusting vs. Suspicious	-.23*	-.21*	-.24
M	Practical vs. Imaginative	.02	.09	.23
N	Forthright vs. Shrewd	-.10	-.07	.30*
O	Placid vs. Apprehensive	-.07	-.05	-.05
Q1	Conservative vs. Experimenting	-.01	-.02	.08
Q2	Dependent vs. Self-Sufficient	.04	.10	.11
Q3	Casual vs. Controlled	-.02	.04	.27
Q4	Relaxed vs. Tense	-.08	-.06	.10
D Scale		-.22*	-.30*	-.37*
PBI		.02	.18	-.11
TPI		.45*	.45*	.64*

[1]GPA column correlation based on n=35 cases

*Correlation significantly different from zero $p<.05$

TABLE 2

Summary of 16 PF - D Scale Correlations
(n=63)

	16 PF Factors	r	p
A	Reserved vs. Out-going	.42	.001
B	Dull vs. Bright	.35	.003
C	Emotional vs. Mature	.40	.001
E	Submissive vs. Dominant	.43	.001
F	Sober vs. Enthusiastic	.41	.001
G	Expedient vs. Conscientious	.51	.001
H	Shy vs. Venturesome	.19	.064
I	Toughminded vs. Tenderminded	.48	.001
L	Trusting vs. Suspicious	.40	.001
M	Practical vs. Imaginative	.38	.001
N	Forthright vs. Shrewd	.41	.001
O	Placid vs. Apprehensive	.49	.001
Q1	Conservative vs. Experimenting	.41	.001
Q2	Dependent vs. Self-Sufficient	.47	.001
Q3	Casual vs. Controlled	.43	.001
Q4	Relaxed vs. Tense	.53	.001

yond the .05 level, with the exception of factor H (Shy vs. Venturesome).

DISCUSSION AND CONCLUSIONS

On the basis of the analyses undertaken, it was concluded that certain personality characteristics and teaching practices beliefs are significantly related to traditional cognitive outcomes associated with preservice teacher education students. It also appears that preservice teachers having high agreement with Dewey's educational philosophy are more likely to achieve high NTE Weighted Common and Total scores and have higher cumulative GPA's upon graduation. A finding of additional interest was the large number of significant correlation between the D Scale and the 16 PF. Past studies with these instruments have shown the D Scale to correlate with only 4 or 5 of the 16 PF Factors (Elmore & Ellett, 1978).

The findings of the present study are important because they demonstrate highly significant relationships between teacher education students' personality characteristics and belief systems and traditionally used cognitive variables associated with success in a teacher education program. The finding that teacher education students who are relatively dogmatic, suspicious, and shrewd and who disagree with Dewey's educational philosophy tend to score lower on the NTE and have lower GPA's, has implications for program planners using these cognitive variables as indicators of teacher education program quality. It appears that a teacher education program incorporating the philosophy of Dewey at the basic curriculum level might well foster students who score relatively higher on the NTE. If NTE scores and overall GPA continue to be used as general indicators of cognitive success of teacher education students, then entering students might first be screened on selected factors of the 16 PF and scores on the Brown PBI to increase the probability of success. It will be interesting to follow these same students once they are employed in the teaching profession

and again examine these relationships and assess affective and personality characteristic changes that may occur.

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